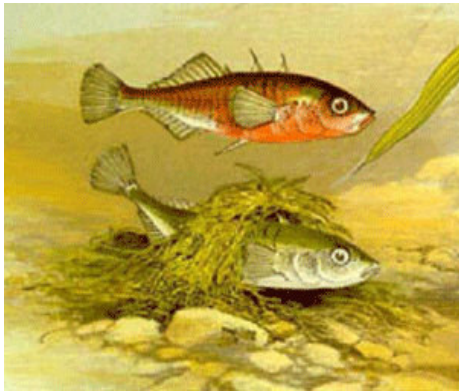


# Finding the Genes that Matter in Natural Populations: Lessons from Threespine Stickleback



Members of my laboratory are very interested in understanding how evolutionary processes shape developmental systems in natural populations. For most of our empirical work, we use the threespine stickleback as a model research organism to understand in what genes and developmental pathways genetic variation resides. This small fish has a very broad geographic distribution throughout the Northern Hemisphere, from Baja to Alaska, and can be found in many of the lakes, streams and rivers of Central Oregon. Most importantly for our work, stickleback exhibit extensive variation in

numerous characters, such as the size and shapes of bones and cartilage, physiological characteristics that allow them to exist in very different environments, and behaviors that they use during courtship. Using a variety of molecular techniques, we are just beginning to understand the developmental and genetic basis of stickleback phenotypic variation. Presently our work focuses on the evolution of armor structures, craniofacial morphology, and physiological response to different photoperiods. In addition to providing fundamental insights into the genes that matter in natural populations, our work has important implications for human health. Much of the variation we study, for example bone loss, has analogues in human diseases, such as osteoporosis and arthritis. The genes that we find matter in natural stickleback populations also provide good candidates for numerous common human genetic disorders.



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## ~COLLOQUIUM~

Friday, April 27, 2007

3:00 p.m. in Ochoco 204, COCC Campus

Presented by **Dr. William Cresko**

Professor of Biology,

University of Oregon



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